REMARKS

Claims 1, 2, 8-10, 15, 17, 19 and 21 are amended herein. Claims 1-22 remain pending in the application.

Defective Declaration of the Invention

The Office Action alleges that the Declaration of the Invention is defective because it contains non-initialed and/or non-dated alterations and failing to identify the mailing address of each inventor, failing to comply with 37 CFR 1.52(c), 37 CFR 1.63(c) and 37 CFR 1.76.

It appears that the secondary pages of both the Declaration and Assignment as filed originally with the application were inadvertently switched in a clerical stage. The original documents were properly paginated and executed by the inventors.

Attached hereto is a correctly paginated Declaration of the Invention and Assignment as originally signed. The Applicant respectfully requests the objection to the Declaration be withdrawn.

Claims 10-13, 15, 16 and 19-22 over Colligan

In the Office Action, claims 10-13, 15, 16 and 19-22 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Colligan et al., U.S. Patent No. 6,415,031 ("Colligan"). The Applicants respectfully traverse the rejection.

Claims 10-13, 15, 16 and 19-22 recite, *inter alia,* a method and apparatus for scrambling and descrambling only a portion of every nth one of a plurality of data packets.

Colligan appears to disclose a selective encryption method that encrypts a TS payload if it is selected by a counter (col. 12, lines 54-55). A counter is incremented and a determination is made as to whether the counter has been incremented to a next periodic subset of counts (Colligan, col. 12, lines 56-61). If the counter has been incremented to a next periodic subset of counts,

selective encryption is performed on the current TS payload (Colligan, col. 12, lines 62-66).

Colligan discloses encrypting an nth TS payload based on a counter incrementing to a next periodic subset of counts. However, the entire TS payload is encrypted. Colligan fails to disclose or suggest a method and apparatus for scrambling and descrambling only a portion of every nth one of a plurality of data packets, as recited by claims 10-13, 15, 16 and 19-22.

A benefit of scrambling and descrambling only a portion of every nth one of a plurality of data packets is, e.g., reducing computational requirements for scrambling and descrambling. Scrambling and descrambling can be computationally intensive, depending on the amount of encryption used. Scrambling and descrambling every nth data packet reduces computational requirements. However, to further reduce computational requirements only a portion of the every nth one of a plurality of data packets can further reduce computational requirements, while still maintaining security of the associated data packets. The cited prior art fails to or suggest a method and apparatus with such benefits.

Accordingly, for at least all the above reasons, claims 10-13, 15, 16 and 19-22 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 1-6 over Colligan in view of Nardone

In the Office Action, claims 1-6 were rejected under 35 U.S.C. §103(a) as allegedly being anticipated by Colligan in view of Nardone et al., U.S. Patent No. 5,805,700 ("Nardone"). The Applicants respectfully traverse the rejection.

Claims 1-6 recite, *inter alia,* a header portion that is entirely unscrambled and a data payload that includes a scrambled portion and an unscrambled portion.

Colligan appears to disclose a selective encryption method that encrypts a TS payload if it is selected by a counter (col. 12, lines 54-55). A

counter is incremented and a determination is made as to whether the counter has been incremented to a next periodic subset of counts (Colligan, col. 12, lines 56-61). If the counter has been incremented to a next periodic subset of counts, selective encryption is performed on the current TS payload (Colligan, col. 12, lines 62-66).

The Office Action correctly acknowledged that Colligan fails to disclose the data payload including a scrambled portion and an unscrambled portion (Office Action, page 6). However, the Office Action relies on Nardone to allegedly make up for the deficiencies in Colligan to arrive at the claimed invention.

Nardone appears to disclose basic transfer units (BTUs) of compressed video data of video images are selectively encrypted to degrade video images to at least a virtually useless state (Abstract). As a result, degradation approaches the level provided by total encryption, but requires only a fraction of processor cycle cost to decrypt and render images (Nardone, Abstract). Each BTU contains the start code of either a group of pictures, an I-frame, a B-frame, or a P-frame is encrypted (Nardone, col. 3, lines 44-49). By encrypting each of the BTUs containing the start code of a group of pictures or the start code of frames, the frames are unrecoverable (Nardone, col. 3, lines 49-64).

Nardone discloses encrypting BTUs that contain the start code, i.e., the header of a frame of data. Nardone's header of a frame of data including scrambled data is NOT a header portion that is entirely unscrambled with a data payload that includes a scrambled portion and an unscrambled portion, as recited by claims 1-6.

A benefit of utilizing a header portion that is entirely unscrambled with a data payload includes a scrambled portion and an unscrambled portion is, e.g., compatibility. For applications using an MPEG-2 bitstream complying with an appropriate standard, e.g., ISO/IEC 13818-1, no scrambling is allowed of the header portion of a transport packet. By scrambling a data payload and leaving the header portion unscrambled, Applicants' invention allows a

scrambling/descrambling system to maintain compatibility with existing standards and minimizing processing power required to encrypt/decrypt data.

Moreover, even if the theoretical **combination** of Colligan and Nardone were obvious (which it is not), the result would be periodic encryption of payloads (Colligan) with encryption of a header of a data frame (Nardone). By encrypting both the data payload **and** the header, the amount of processing power needed to decrypt a given frame would be roughly doubled. Thus, the theoretical combination would detract from the purpose of both Colligan's and Nardone's inventions, with each disclosing a method for reducing the amount of processing needed to decrypt a data frame.

Neither Colligan nor Nardone, either alone or in combination, disclose, teach **or suggest** a header portion that includes **only** unscrambled data and a data payload that includes a scrambled portion and an unscrambled portion, as recited by claims 1-6.

Accordingly, for at least all the above reasons, claims 1-6 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 7 and 14 over Colligan in view of Nardone and Ishibashi

In the Office Action, claim 7 was rejected under 35 U.S.C. §103(a) as allegedly being obvious over Colligan in view of Nardone, and further in view of Ishibashi, U.S. Patent No. 6,021,199 ("Ishibashi"), with claim 14 rejected under 35 U.S.C. §103(a) as allegedly being obvious over Colligan in view of Ishibashi. The Applicants respectfully traverse the rejection.

Claims 7 and 14 are dependent on claims 1 and 10, and are allowable for at least the same reasons as claims 1 and 10.

Claim 7 recites, *inter alia,* a header portion that is **entirely** unscrambled and associated with an unscrambled version of a data payload, the data payload including a scrambled portion and an unscrambled portion.

As discussed above, neither Colligan nor Nardone, either alone or in combination, disclose, teach or suggest a header portion that is entirely

unscrambled and a data payload that includes a scrambled portion and an unscrambled portion, as recited by claim 7.

The Office Action relies on Ishibashi to allegedly make up for the deficiencies in Colligan and Nardone to arrive at the claimed invention.

Ishibashi appears to disclose an encryption scheme that only encrypts an I picture of I, P and B pictures contained in an MPEG 2 data stream (Abstract). The stream header portion of the MPEG 2 data stream includes scrambled data, i.e., the location of the I picture (Ishibashi, col. 4, lines 12-15).

Although Ishibashi discloses an encryption scheme that scrambles a portion of a data payload, the header contains scramble data that is associated with a scrambled data payload. Ishibashi fails to disclose or suggest a header portion that is entirely unscrambled and associated with a data payload including a scrambled portion and an unscrambled portion, as recited by claim 7.

Neither Colligan, Nardone nor Ishibashi, either alone or in combination, disclose, teach or suggest a header portion that is **entirely** unscrambled and associated with a data payload including a scrambled portion and an unscrambled portion, as recited by claim 7.

A benefit of a device utilizing a header portion that is entirely unscrambled and associated with a data payload that includes a scrambled portion and an unscrambled portion is, e.g., reduced processing overhead. A packet of data utilizing a header that contains scramble data of a payload portion requires a processor to read and decode the scramble data for further processing of the associated data payload. This processing of the scramble data in the header increases the overall processing overhead, requiring a processor that is able to process the scramble data and apply the scramble data to the data payload all in time for, e.g., in the case of MPEG 2 a un-jittery picture. The Applicants invention allows use of a reduced cost/capacity processor that needs to descramble the scrambled portion of the data payload of a packet. The cited prior art fails to disclose or suggest such a method and apparatus having such benefits.

Claim 14 recites, *inter alia,* scrambling only a portion of every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled.

As discussed above, Colligan fails to disclose or suggest scrambling only a portion of every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled, as recited by claim 14.

The Office Action relies on Ishibashi to allegedly make up for the deficiencies in Colligan to arrive at the claimed invention.

Ishibashi is relied on to disclose a data packet stream that comprises compressed video data and compressed audio data (Office Action, page 13).

As discussed above, Ishibashi discloses an encryption scheme that scrambles a portion of a data payload, with the header containing scramble data describing scrambling used in the data payload. Ishibashi fails to disclose or suggest scrambling of every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled, much less only a portion of every nth one of said plurality of data packets, as recited by claim 14.

Neither Colligan nor Ishibashi, either alone or in combination, disclose teach or suggest scrambling only a portion of every nth one of said plurality of data packets, where n is an integer greater than 1, leaving remaining ones of said plurality of data packets unscrambled, as recited by claim 14.

Moreover, even if the theoretical **combination** of Colligan, Nardone and Ishibashi were obvious (which it is not), the result would be periodic encryption of payloads (Colligan) with encryption of a header of a data frame (Nardone) and encryption of an I picture with a header identifying encryption data of the I picture (Ishibashi). By encrypting both the data payload **and** the header, the amount of processing power needed to decrypt a given frame would be doubled. Thus, the theoretical combination would detract from the purpose of all

of Colligan's, Nardone's and Ishibashi's inventions, with each disclosing a method for reducing the amount of processing needed to decrypt a data frame.

Accordingly, for at least all the above reasons, claims 7 and 14 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Claims 8, 9, 17 and 18 over Colligan in view of Akins

In the Office Action, claims 8, 17 and 18 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Colligan in view of Akins II et al., U.S. Patent No. 6,246,767 ("Akins"), with claim 9 rejected under 35 U.S.C. §103(a) as allegedly being obvious over Colligan in view of Akins and further in view of Nardone. The Applicants respectfully traverse the rejection.

Claims 8, 9, 17 and 18 recite, *inter alia,* scrambling a first portion of a data payload of some of a plurality of data packets within a data packet stream without scrambling a header of the some of the plurality of data packets while leaving remaining ones of the plurality of data packets unscrambled.

As discussed above, Colligan discloses encrypting an nth TS payload based on a counter incrementing to a next periodic subset of counts. However, the entire TS payload is encrypted.

The Office Action correctly acknowledged that Colligan fails to disclose an encryption method performing encryption without scrambling a header of at least some of a plurality of data packets (Office Action, page 9). The Office Action relies on Akins to allegedly make up for the deficiencies in Colligan to arrive at the claimed invention.

Akins appears to disclose a headend from which service "instances" or programs are broadcast and a plurality of set top units for receiving the instances and selectively decrypting the instances (Abstract). Any part or all of a MPEG 2 transport stream may be encrypted, except that packet headers and adaptation fields are never encrypted (Akins, col. 19, lines 21-23).

Although Akins discloses never encrypting packet headers, any part or all of a MPEG 2 transport stream 701 are encrypted. Scrambling part of a

packet or all of the packets of a transport stream, i.e., each packet is at least partially scrambled, is **NOT** scrambling a portion of a data payload of **some** of a plurality of data packets within a data packet stream, as recited by claims 8, 17 and 18.

As discussed above, Nardone discloses encrypting BTUs that contain the start code, i.e., the header of a frame of data. Nardone fails to disclose or suggest scrambling **some** of a plurality of data packets without scrambling a header of the some of the plurality of data packets, as recited by claims 8, 9, 17 and 18.

Neither Colligan, Akins nor Nardone, either alone or in combination, disclose, teach or suggest scrambling a first portion of a data payload of **some** of a plurality of data packets within a data packet stream without scrambling a header of the some of the plurality of data packets while leaving remaining ones of the plurality of data packets unscrambled, as recited by claims 8, 9, 17 and 18.

Moreover, even if the theoretical **combination** of Colligan, Akins and Nardone were obvious (which it is not), the result would be periodic encryption of payloads (Colligan), any part of an MPEG 2 transport stream being at least partially scrambling (Akins) with encryption of a header of a data frame (Nardone). By encrypting both the data payload **and** the header, the amount of processing power needed to decrypt a given frame would be roughly doubled. Thus, the theoretical combination would detract from the purpose of Colligan's, Akins' and Nardone's inventions, with each disclosing a method for reducing the amount of processing needed to decrypt a data frame.

Accordingly, for at least all the above reasons, claims 8, 9, 17 and 18 are patentable over the prior art of record. It is therefore respectfully requested that the rejection be withdrawn.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,
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